

*Extract of a Letter from Father A. Secchi, Director of the
Observatory of the Collegio Romano.*

"I have repeated M. Léon Foucault's experiment with a pendulum 31 metres long, and a weight of 28 kilograms; I have measured the angles with the greatest care, and have constantly found the deviation such as it should be according to theory. There is, however, a slight difference in the motion at the beginning and end of the series: at the beginning the angles are a few minutes in excess, and at the end a few minutes in defect. The errors, to be sure, are not larger than the probable errors of observation; but as they are constantly the same way, they seem to indicate a physical cause. They can have no effect to destroy this proof of the rotation of the earth. I have not completed the reduction of these observations; but the length and number of my series, some of which lasted six hours, leave no doubt at all as to the conclusion. I am surprised, therefore, to see that some English journals cast doubt on the correctness of this demonstration; but I presume these objections do not come from your men of science."

A Method of Delineating graphically M. Foucault's Pendulum-experiment demonstrative of the Earth's Diurnal Rotation.
By J. Drew, Esq., *Phil. Doct.*, &c.

Mr. Drew conceives that the problem of the apparent rotation of the plane of a vibrating pendulum, with respect to the azimuthal plane at any point of the earth's surface, in consequence of the diurnal rotation, may be rendered clearer by the following graphical method of considering it:—

Draw the circle of latitude for the place at which the experiment is made, and imagine the cone enveloping the earth's surface at this circle to be also drawn. The apex of this cone will be in the earth's axis produced, and the length of its side will be the earth's radius $\times$ cot. lat. of place.

Draw horary lines from the apex of the cone to the base or circle of latitude; then, if the sheet of the cone be imagined to be developed into a plane, the successive angles formed by the radial or horary lines with the initial radius representing the initial plane of vibration will represent the corresponding angles of revolution of the pendulum with respect to the azimuthal plane.

Now, the first of these angles,

$$\begin{aligned}
 &= \frac{\text{subtending arc}}{\text{length of side of cone}} \\
 &= \frac{\text{equatoreal arc} \times \cos. \text{ lat.}}{\text{rad.} \times \cot. \text{ lat.}} \\
 &= 15^\circ \times \sin. \text{ lat.}
 \end{aligned}$$

This, then, neglecting the small quantities that enter into the

rigorous solution of the problem, is the angle described by the plane of the pendulum in one hour of the earth's rotation, and Mr. Drew proposes to mark off angles equal to this through the whole circumference of the circle formed by the developed cone, and to draw lines through the points of the circumference thus formed parallel to that radius which represents the initial plane of vibration. If the cone be then made to envelope the sphere again, the lines thus drawn will represent to the eye the directions in which the pendulum will be swinging at each successive hour of departure from the initial plane during a whole day.

In the course of the evening, Mr. Sheepshanks gave a hurried account of the methods which he had adopted for graduating standard thermometers. Professor Piazzzi Smyth made some remarks on reflecting instruments, with suggestions for their improvement. The substance of these lectures will probably form part of a supplementary *Notice*. This *Notice* will contain two other papers. These have been postponed from the present Number, *as they would have doubled the postage*.